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1380 (5700)

AIR OPERATIONS
ANNUAL REPORT

CALENDAR YEAR 1965

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION ONE
MISSOULA, MONTANA

1380 (5700)

Missoula, Montana
February 1966

REGION 1

AIR OPERATIONS REPORT

C. Y. 1965

Approved: February 28, 1966

E. R. McDevitt

Acting Regional Forester

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I. PARACHUTE PROJECT

A. Highlights of 1965 Season

During the 1965 season, 177 active smokejumpers were employed at the Missoula Base. In addition, 8 men were assigned to the Interagency base at West Yellowstone. Previous to this year the base was operated by Yellowstone National Park. There were 130 returning jumpers who received the standard one-week refresher course and 55 new trainees attended the standard one-month training course.

The table on fires and jumps by 10-day periods shows only one short period in July when activity was rather busy. During the period July 21 to 31 there were 126 jumps to 40 fires.

The season started on May 5 when 18 men including 6 from Region 4 were given refresher training and then assigned to Region 3 at Silver City, New Mexico. In July a reinforcement crew of 14 men was sent down. This crew was jumping on fires within 8 hours after takeoff from Missoula. The last of the men returned to the Missoula base on August 1. Fire activity by the Region 1 jumpers in Region 3 consisted of 110 jumps to 61 fires.

On May 29, a 20-man crew flew to Fairbanks, Alaska for assignment to the Bureau of Land Management. They returned to Missoula on July 28. Fire activity was light with only 47 jumps to 26 fires.

The Interagency Air Operations Base at West Yellowstone had a very light season with only one fire manned on Elizabeth Creek on the Shoshone Forest. The drop altitude was at 11,500 feet. The base was in operation from June 28 through September 15. The base is financed jointly by Regions 1, 2, 4, and Yellowstone National Park. Construction of a complex at the new airport will be well underway by next fire season.

The Grangeville subbase was in operation between July 6 and August 27. During this period the crew of 17 smokejumpers was very active with 95 jumps to 35 fires.

The first fire jump from Missoula was May 26 on the Nezperce Forest. The last jump was on October 23 when 6 jumpers were dropped on a man-caused fire on the St. Joe Forest.

Missoula based jumpers were dispatched several times during the season to help Region 6. A total of 111 jumps were made to 33 fires.

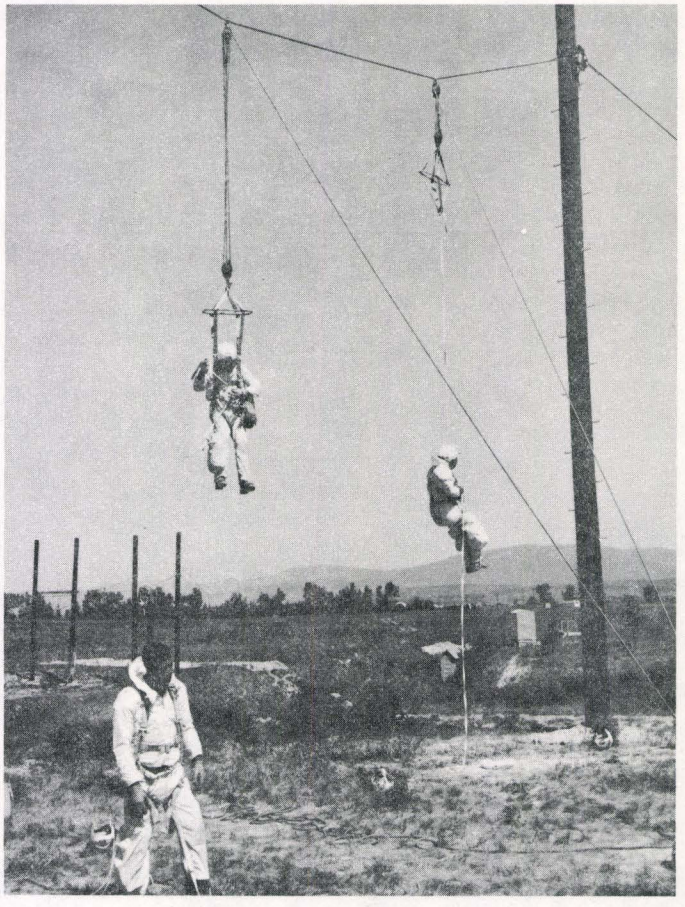
One fire was manned with two smokejumpers on the Flathead Indian Reservation. The Indian Agency finances four of the smokejumpers that are based at Missoula.

With a very light fire season over 8,000 man days were spent on Forest and Region work projects. Men were assigned to 10 of the Forests on projects of building construction, trail construction, slash disposal, TSI, road surveys and spray projects. By the first week in September, 90 jumpers were transferred to the Forests to complete their fall employment.

Jump tower with cable to simulate exiting from plane.

Jumper out of tower and starting down cable.

Jumpers practicing landing fall by jumping from high ramp.



Letdown procedure training. Jumper on right is descending on nylon line.

The project again conducted training courses for personnel from the U. S. Air Force X-15 Rocket Recovery program. Each session consisted of 10 training jumps into timbered mountainous terrain. The men were taught the fundamentals of spotting, cargo dropping and parachute retrieving. This special training is conducted to qualify personnel to jump into rough terrain and rescue the pilot of the X-15 in case a plane malfunction forced him to bail out.

Two special parachute rigger training schools were conducted for the Federal Aviation Agency. These classes were to instruct FAA personnel in the procedures of parachute rigging and maintenance. Each class consisted of eight men and sessions were for a 2-week period. The trainees came from widely scattered points in the United States.

Two commercial motion picture companies made documentaries of the smokejumper project. A Huntley-Brinkley and a British Broadcasting Company spent several days making the pictures.

B. Training

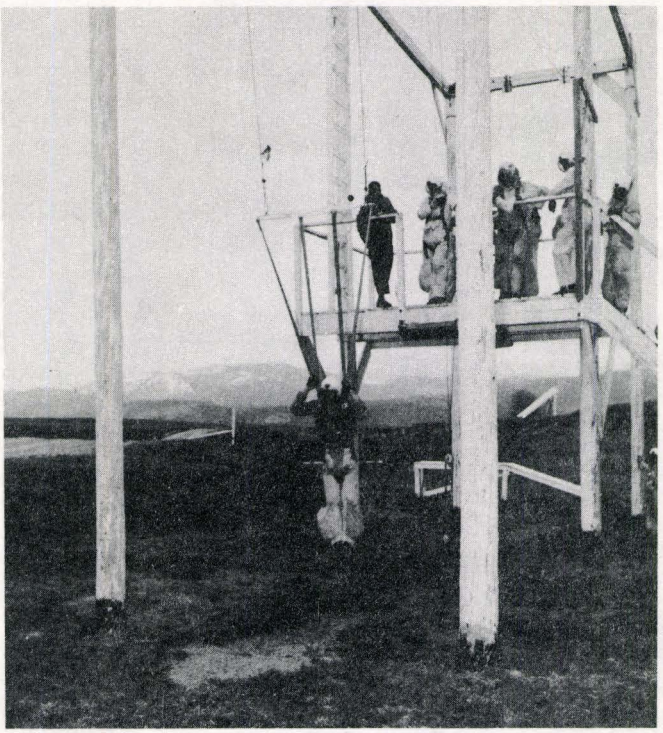
During the 1965 season 199 jumpers were trained by the Missoula Parachute Project. Of this total, 124 were returning smokejumpers and overhead who completed the 1-week refresher course, and 55 were new trainees who received the 1-month training course; six were Region 4 men who took refresher training at Missoula. Also four men from the Missoula Equipment Development & Testing Center, one man from Yellowstone National Park Service and one man from Region 5 completed the 1-week refresher course at Missoula. Again this year the United States Air Force sent men to the Missoula Smokejumper base for a special training course in timber jumping. Eight of these Air Force men connected with the X-15 Rocket Recovery Program completed the special 2-week training course.

There were seven standard 1-week refresher courses given in 1965. The refresher course consisted of 28.5 hours devoted to fire training and 11.5 hours devoted to Parachute training. The first refresher training group consisting of all available overhead, began March 19 and the last refresher group completed training August 4, 1965.

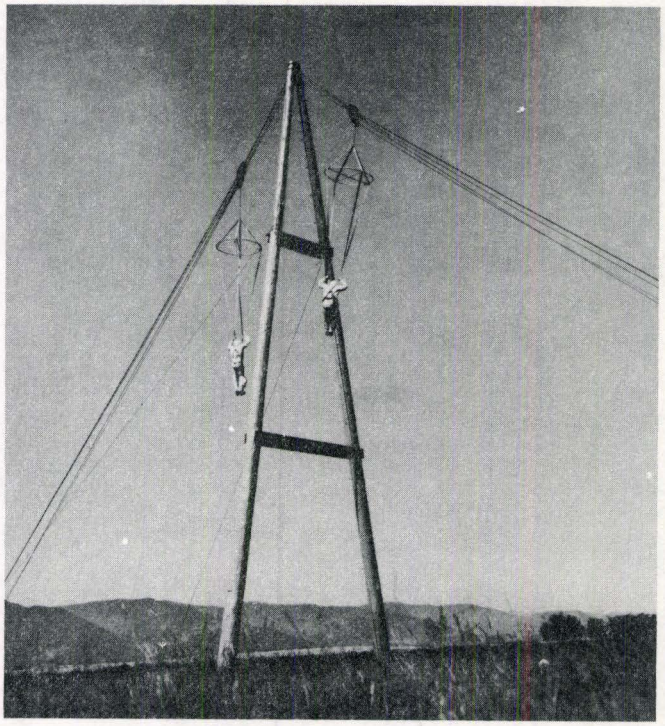
The 1-month new man training course began June 14 and 55 men, out of 60 who began training, graduated on July 9, 1965. Five men were dropped from the training due to physical or mental reasons.

The 1-month new man training course consisted of 96 hours devoted to fire training and 64 hours of parachute training. New men completed seven training jumps each and returning jumpers completed two jumps each.

The policy of maintaining jumper proficiency in parachute handling by having a refresher jump after 30 days of inactivity was continued during the season. During the winter months overhead remained proficient by jumping 2 to 3 miles from the end of a road and snowshoeing back out, pulling their gear in a toboggan for winter rescue training.



Smokejumpers on Canadian swing landing trainer.



Two jumpers on A-frame landing simulation. This device is designed to give realistic landing approach.

TRAINING AND REFRESHER JUMPING - 1965

Dates	R-1		MEDC		YNP		R-4		R-5		USAF		Total	
	No.	Jumps	No.	Jumps	No.	Jumps	No.	Jumps	No.	Jumps	No.	Jumps	No.	Jumps
1/13 - 4/22	16	104											16	104
5/3 - 5/14									1	1	3	36	4	37
5/5 - 5/18	12	47					6	12					18	59
5/24 - 5/28	17	40											17	40
6/7 - 6/11	25	58			1	2							26	60
6/14 - 6/18	43	92											43	92
6/28 - 7/15	63	493				2							63	495
7/27 - 8/26	3	41	4	8		1							7	50
9/8 - 10/1		21												21
10/12 - 10/24		22									5	42	5	64
12/8 - 12/31		16		4										20
TOTALS	179	934	4	12	1	5	6	12	1	1	8	78	199	1042

C. Accomplishments

ELAPSED TIME AVERAGES -- MISSOULA BASE -- REGION 1, ONLY

Average elapsed time call to takeoff, (getaway time) based on 60 flights to 66 fires. Includes dry runs, in flight requests, and actual fires dropped on. Excludes overnight requests, delays due to weather and non-availability of ships.	12 minutes
Average elapsed time, takeoff to jump, 66 fires.	76 minutes
Average elapsed time, jump to fire action, 66 fires.	46 minutes
Average elapsed time, call to fire action.	134 minutes
Average number of men per fire, 66 fires	3.2 men

ELAPSED TIME AVERAGES -- GRANGEVILLE SUBBASE

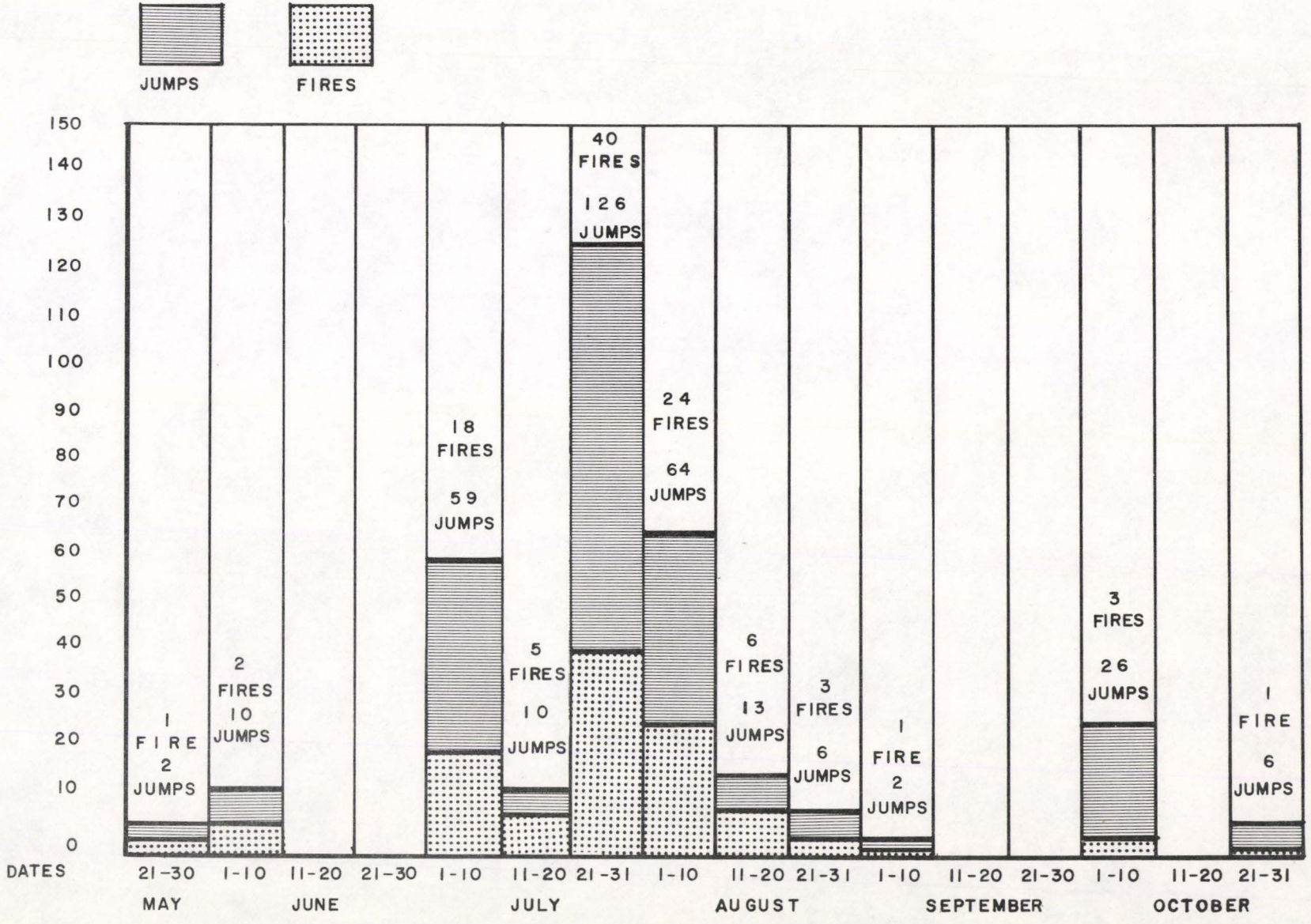
Average elapsed time call to takeoff, (getaway time) based on 41 flights to 35 fires. Includes dry runs, in flight requests, and actual fires dropped on. Excludes overnight requests, delays due to weather and non-availability of ships.	10 minutes
Average elapsed time, takeoff to jump, 35 fires.	68 minutes
Average elapsed time, call to fire action, 33 fires.	97 minutes
Average number of men per fire, 35 fires.	2.7 men

AVERAGE AIR SPEEDS

DC-2, DC-3, Twin Beech -- 140 miles per hour

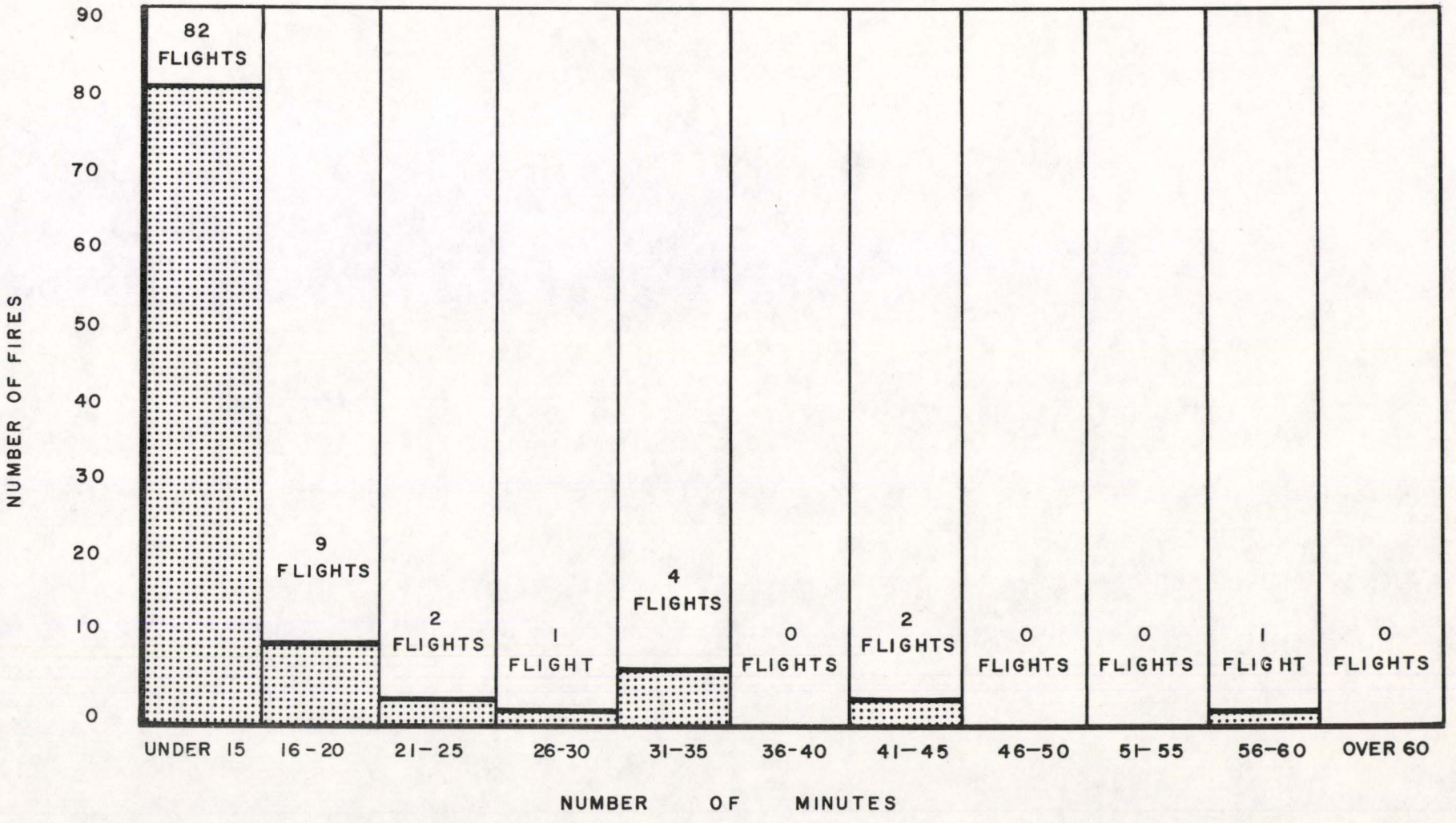
Ford tri-motor -- 80 miles per hour

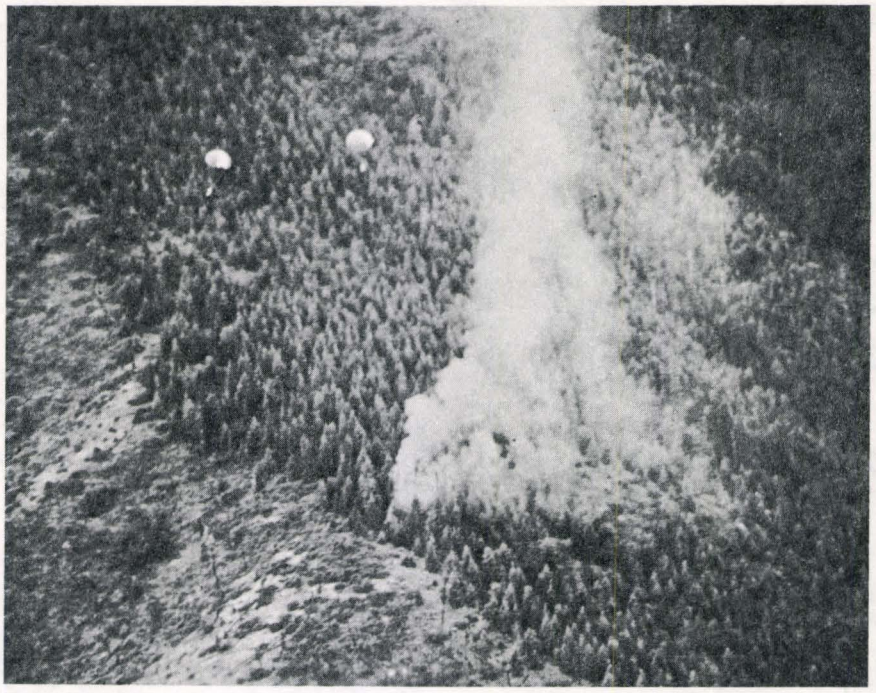
FIRES & JUMPS BY 10 DAY PERIODS REGION 1
1965



ELAPSED TIMES CALL TO TAKE OFF OF AIRCRAFT

INCLUDING DRY RUNS, IN AIR-REQUESTS, EXCLUDING NIGHT CALLS AND DELAYS
DUE TO WEATHER. BASED ON 66 FLIGHTS FROM MISSOULA AND 35 FLIGHTS FROM GRANGEVILLE.



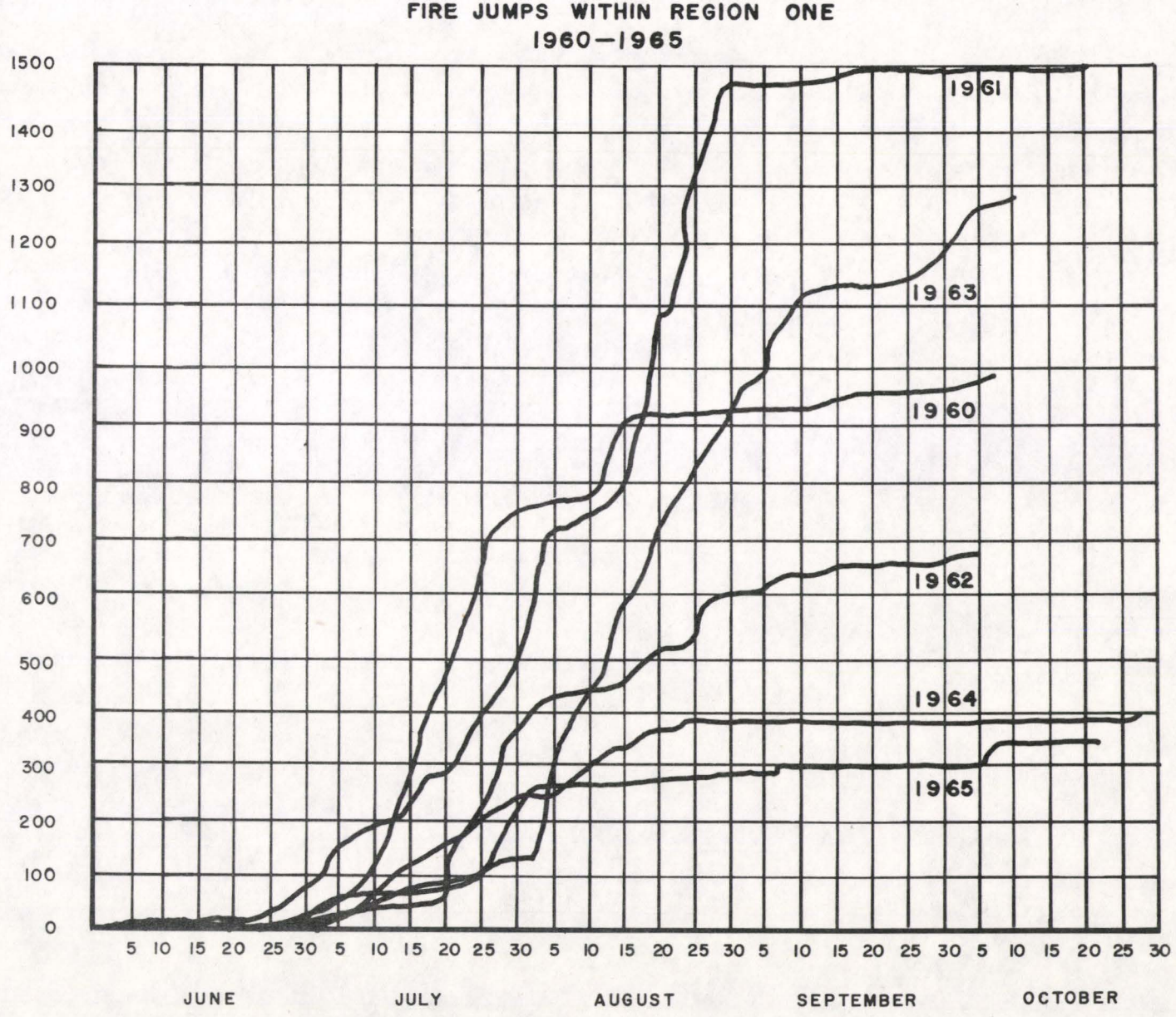


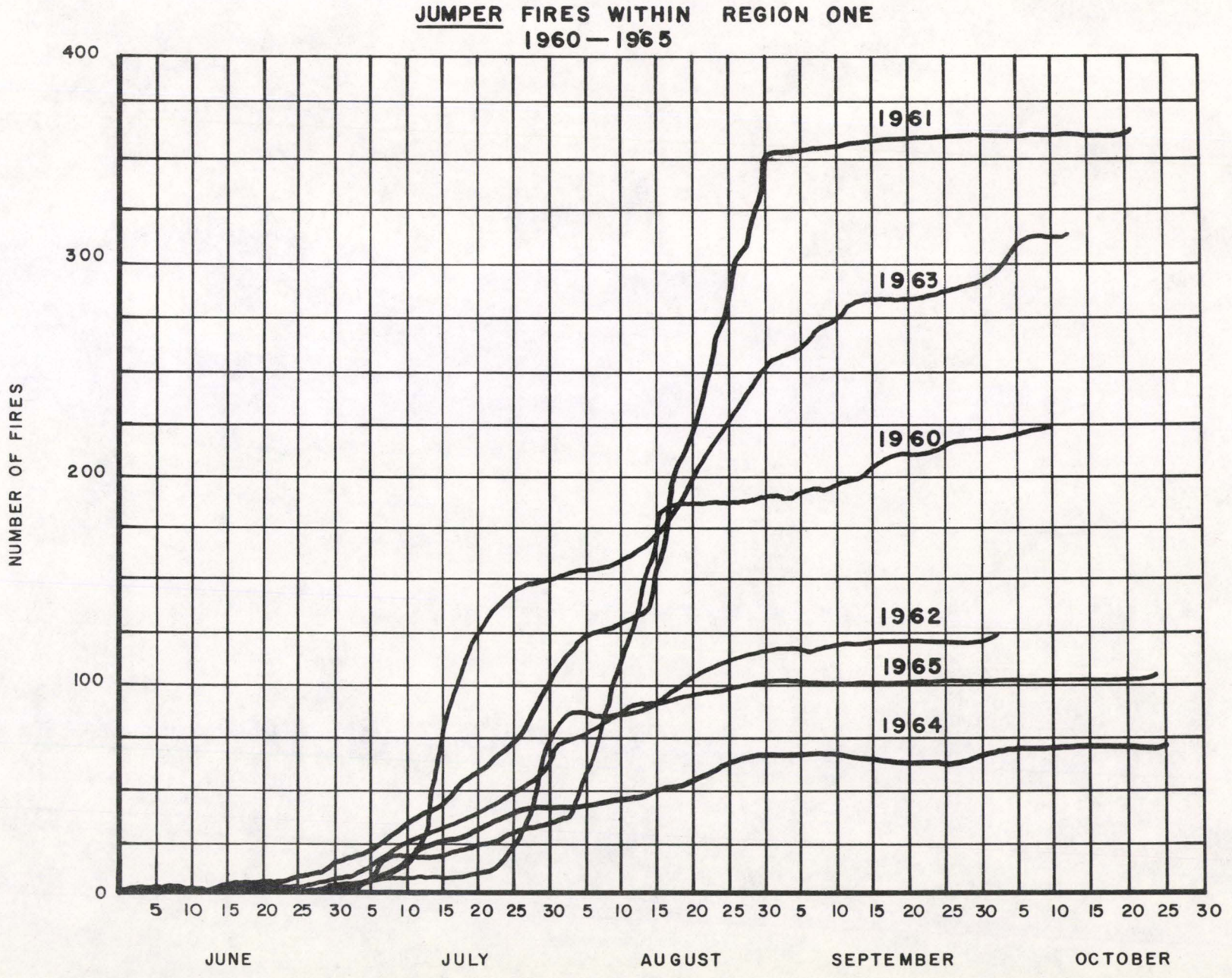
Smokejumpers descending near remote
fire in Nezperce National Forest.

1965 SUPPRESSION USE OF REGION 1 SMOKEJUMPERS

FOREST	NO. OF FIRES INITIAL ATTACK	NO. OF FIRES REINFORCEMENT	NO. OF FIRE JUMPS	MAN HOURS ON SMOKEJUMPER FIRES *	GROUND ACTION NO. OF FIRES	GROUND ACTION NO. OF MEN	GROUND ACTION MAN HOURS*
Beaverhead		1	8	220			
Bitterroot	6	2	20	528			
Clearwater	8	1	42	1439			
Flathead	5		10	405			
Lolo	8		22	403			
Nezperce							
Missoula Base	24		91	3646			
Grangeville	34	1	95	3086	1	2	39
St. Joe	9	2	34	1230			
TOTAL	94	7	322	10984	1	2	39
OTHER GOVERNMENT AGENCIES							
Flathead Indian Reservation	1		2	45			
BLM (Alaska)	23	2	47	1452	8	28	660
TOTAL	24	2	49	1497	8	28	660
OTHER FOREST SERVICE REGIONS							
R-3	51	10	110	1933	2	5	107
R-4					1	1	37
R-6	24	9	111	3215	1	1	85
TOTAL	75	19	221	5148	4	7	229
GRAND TOTAL	193	28	592	17629	13	37	928

* Includes travel time to and from fires


FIRE JUMPS WITHIN REGION ONE
1960—1965
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
1961
1963
1960
1962
1964
1965
5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


JUMPER FIRES WITHIN REGION ONE
1960—1965
NUMBER OF FIRES
400
300
200
100
0
1961
1963
1960
1962
1965
1964
5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

D. Project Work

Jumpers were assigned to projects at the Northern Forest Fire Laboratory, Missoula Equipment Development Center, Information and Education Visitors Center, Fire Warehouse and Division of Engineering, when they were not in demand for fire activity. As activity permitted, men were assigned to the Beaverhead, Bitterroot, Clearwater, Coeur d'Alene, Flathead, Helena, Lewis & Clark, Lolo, Nezperce and St. Joe National Forests. Over 8,000 man days were spent on these assignments. Work consisted of technical assistance, building lookouts, trail construction, brush burning, timber stand improvement, road surveys, aerial photo work, blister rust control spray projects and many other District functions.

At the end of the normal fire season in September, 90 jumpers were transferred to projects which included the Forests, Fire Laboratory, Division of Engineering, and Equipment Development. A few of the jumpers were on the projects until late in the year.

While the jumpers were stationed at the Aerial Fire Depot awaiting fire call, they were kept productive by maintaining fire equipment, training units, buildings and grounds. Improvement in efficiency and appearance is always an objective.

E. Other Activities

1. Training Center. The smokejumper dormitory, with its lodging facilities, classroom, and kitchen is the site used for many Regional and Forest training sessions.

During the 1965 calendar year, 15 training sessions were held. Approximately 1600 nights' lodgings were furnished and 5,000 meals prepared for these groups.

Custodial service, training aids, and other services called for were furnished by the project.

2. I and E Programs. Two movies were made of smokejumper activities during this past season.

Full cooperation was given for the Huntley-Brinkley Special. This movie is scheduled for release on TV sometime in the fall of 1966. This will do much to acquaint many people with smokejumper activity and tell the fire story.

Another movie scheduled for overseas release was made by the British Broadcasting Company. This was in the nature of a short commercial but will still do much to tell the same story overseas.

3. Federal Aviation Agency Parachute Rigger Classes. Two groups of Federal Aviation Agency Inspectors were trained for the F.A.A. Senior Parachute Rigger certificate examination. The 10-day classes for each group started March 2 and April 3, 1965.

The scope of the training was to qualify these men to obtain the F.A.A. Rigger certificate, thus enabling them to inspect and evaluate the work of parachute riggers, and to examine in a knowledgeable manner the applicants for a F.A.A. Parachute Rigger certificate. This will give them the background necessary to inspect sky-diving (sport jumping) procedures and equipment.

Rigger training in the U.S.F.S. Missoula parachute loft was given to 40 selected smokejumpers for packing static line operated parachutes. Twenty-nine smokejumpers qualified for and received their F.A.A. parachute rigger certificates for the back and chest types.

During the year, three overhead received their F.A.A. rigger certificates; three qualified and received their Master Parachute Rigger Certificates.

II. FIXED-WING AIRCRAFT USE

A. Highlights

Fixed-wing aircraft use in Region 1 during 1964 was 32 percent less than 1963. This use was further reduced in 1965 by 24 percent. Total flight hours in 1965 was 4,842.

Air tankers and lead planes saw little action during the season. Contracts were awarded for patrol planes on 3 Forests, bringing the total to 54 fixed-wing aircraft under formal contract.

Work was completed on Gates Park airfield. It was lengthened to 4,000 feet and the width increased. The contractor's machinery and supplies were flown out in a DC-3.

A contract was awarded and construction was started on a new airfield at Benchmark. This is a cooperative venture with the Federal Aviation Agency, Montana Aeronautics Commission and Forest Service participating. It is to be a 6,000-foot surfaced runway. The project was 44 percent complete when closed down for the winter.

Analysis of the 1965 regional aircraft contracts reveals the following facts:

Number of formal contracts	26
Total aircraft on formal contracts	72
(Fixed-wing 54)	
(Helicopters 18)	
Number of aircraft on emergency agreement	26
Dollar value of aircraft guarantees:	
Fixed-wing	$160,000
Helicopters	369,590
Total	$529,590

Cost comparison - Helicopters	1965	1964	1963
Number of helicopters	18	16	14
Average cost per hour up to guarantee	$109.43	$116.59	$119.50
Average cost per hour after guarantee is met	$ 94.94	$ 97.50	$108.56

Based on the estimated use for 1965, we will have an actual savings of over $30,000 compared with the 1964 costs. In addition, our helicopter contracts have many features that are advantageous to the projects:

1. A ferry rate when the machines are moved in excess of 125 miles. This reduced the cost of this item over 50 percent.

2. A qualified mechanic with a pickup with each helicopter.

3. If helicopter is not available for a work assignment, the guarantee is reduced 3 hours for each day it is not available.

B. Aerial Delivery

Air freight transported in 1965 was 257,000 pounds and paracargo dropped amounted to 27,300 pounds within the Region.

Included in the paracargo figure is 3,700 pounds of trees that were dropped on the Clearwater Forest. These trees were loaded in Coeur d'Alene in bundles of 125 pounds. Total flying time was 2 hours and 35 minutes for the entire mission. Reports from all concerned indicate that the operation was a complete success.

This is the second year that this method of delivery has been used. In 1964 the trees were trucked to Missoula from the Coeur d'Alene nursery.

C. Spray

One spray project was scheduled in the Region for fixed-wing aircraft. This was for tussock moth control in north central Idaho. Three spray aircraft were involved. A B-17 and a C-39 sprayed DDT and a Ford Tri-Motor was used in applying nuclear polyhedrois virus to a major watershed area. Fifty-four hours of flight were required to complete the project.

There were no accidents in connection with spraying.

D. Research

The Northern Forest Fire Laboratory continued their work in connection with infra-red detection and mapping of forest fires. Aircraft used were a T-29 and Aero Commander 500B.

Cloud seeding experiments were also continued in the Missoula area.

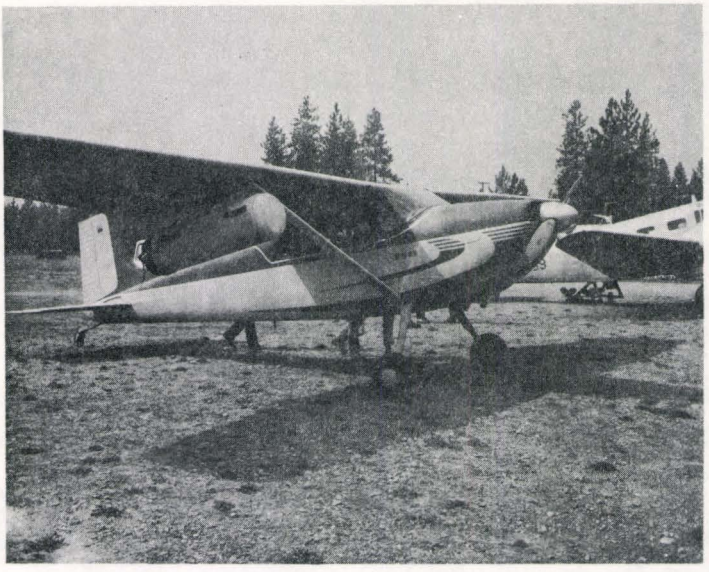
E. Safety

There were no accidents involving fixed-wing aircraft in Region 1 in 1965.

F. Retardant

Retardant bases were the same as in previous years: Helena, Kalispell and Missoula in Montana; Coeur d'Alene and Grangeville in Idaho.

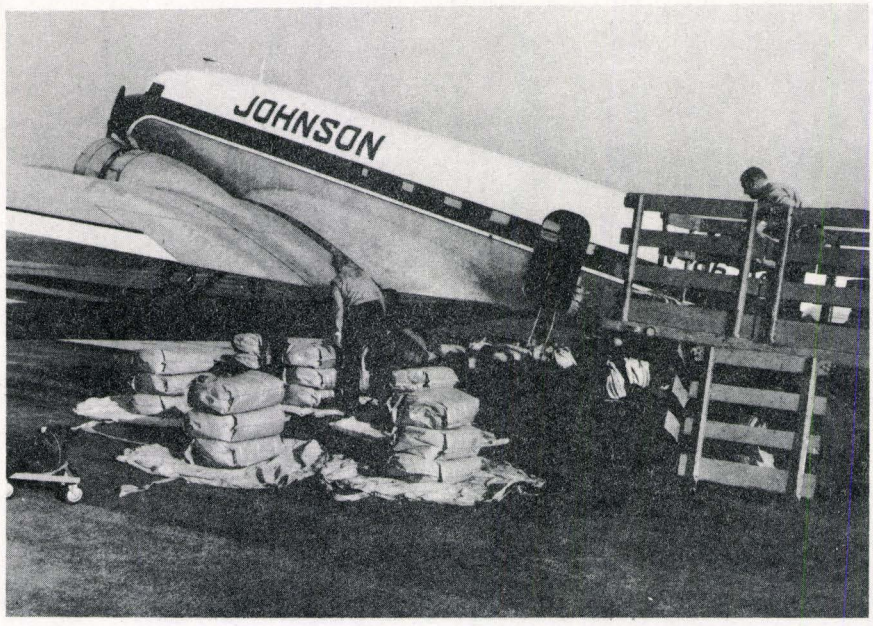
Retardant use was very limited in the Region with 39,400 gallons dropped. This includes water drops made with helicopters using the Mon-Zoon bucket. A contract was negotiated for placing an air tanker at the Coeur d'Alene airfield. All future air tankers will be contracted by negotiation. Fifty percent of the retardant used in Region 1 during 1965 was dropped in the month of October.



Cessna 180 equipped with wing shackles with fiberglass cargo container ready for drop.

FISHLAKE AIRFIELD
Elevation 5900 feet
Field Length 2937 feet
PILOTS - DANGER - BE ALERT FOR TAILWINDS AND DOWNDRAFTS OVER LAKE ON HOT DAYS.
Six accidents have killed 8 people here, all on takeoff. Five planes crashed into the lake.
Density altitude at 10°C is 7500 feet at 80° is 8400 feet.
DELAY TAKEOFF UNTIL CONDITIONS ARE SAFE.
CLEARWATER National Forest
U.S. DEPARTMENT OF AGRICULTURE

Caution sign erected at Fish Lake Airfield to alert pilots of possible dangerous situations.



Cargoing bundles of trees
at Coeur d'Alene Airport.

Pattern of tree drop near Cook Mountain
on Clearwater National Forest.

Retardant Use by Forest

Forest	Number of Fires	Gallons
Beaverhead	1	1200
Bitterroot	1	4800
Clearwater	2	2400
Deerlodge	1	1000
Flathead	2	3400
Helena	3	3000
Lolo	1	600
Nezperce	2	2800
St. Joe	2	5200
Northern Pacific R.R. Co.	1	3600
Flathead Indian Agency	1	4200

On May 18 the Northern Pacific Railway Company requested retardant on burning box cars at the site of a wreck. Effect on this type of fire is controversial.

Progress was made on equipping the retardant plants with 3-inch loading equipment, pumps, pipe and hose. Air tankers, with the exception of Stearman-type, will be equipped with 3-inch loading and unloading couplings.

Some data associated with retardant operations in 1965 are:

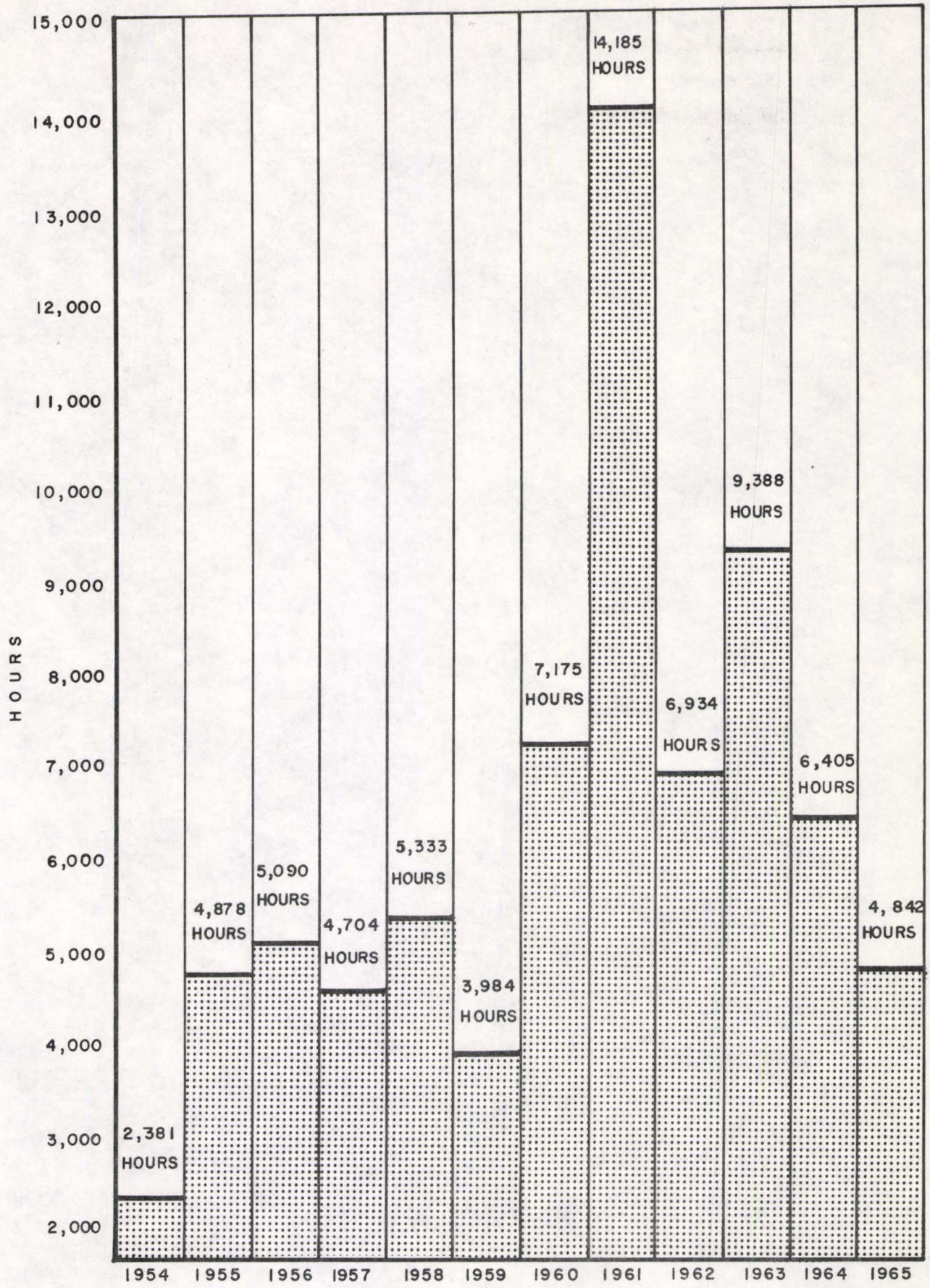
Average time discovery to order for retardant - 58 minutes

Average time from receipt of call until tanker was airborne (Includes post-season fires) - 30 minutes

Average distance from base to fire - 53 miles.

Of the retardant drops on fires in Region 1, 16 percent were made prior to the arrival of ground forces.

FIXED-WING AIRCRAFT USE 1954—1965



Effectiveness of retardant on the fire.

Definite help	72%
Probable help	4%
Doubtful help	4%
No help	20%

When the retardant was not effective the reason was reported as:

Not needed	15%
Missed target	85%

The most frequent cause of the miss was overshooting, although there was one report of a missed target due to communications.

On all drops evaluated, the air observer listed 80 percent as on target while ground evaluators rated 72 percent.

Air observer had 12 percent as partial misses and the ground evaluator 16 percent. Complete miss, by air observer - 8 percent and ground evaluator - 12 percent.

Ninety-six percent of the drops were salvos.

Tactical objective of the drops were listed as follows:

Delaying	20%
Cooling	40%
Line building	36%
Line reinforcing	4%

Swath orientation related to fire edge:

Parallel	84%
Angle	4%
On a spot	12%

Retardant penetration was reported as:

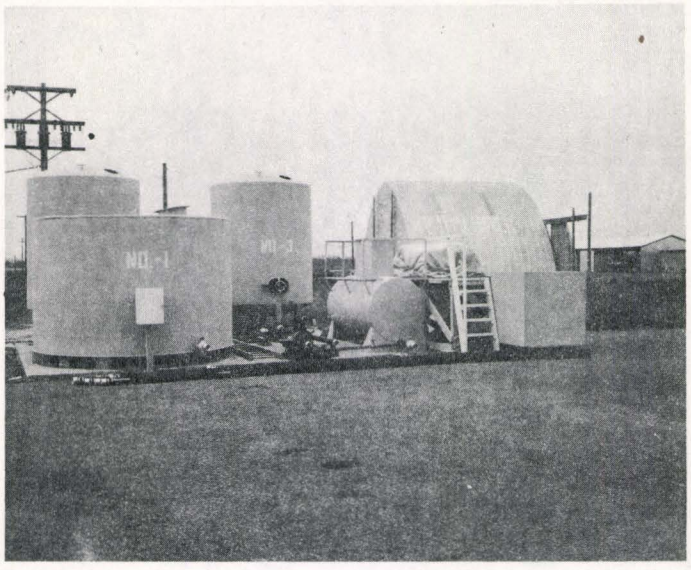
Good	68%
Fair	16%
Poor	16%

G. Training

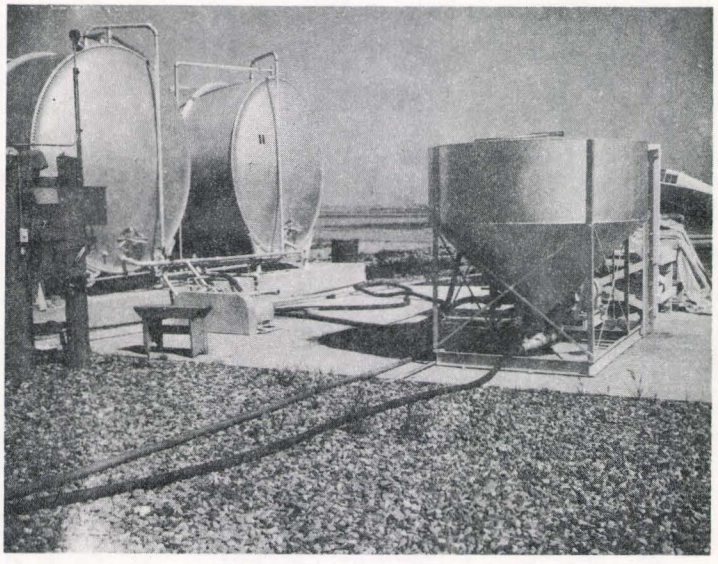
A 2-day training program was held in July for tanker pilots and aerial evaluators. As an added training feature, tankers were loaded with partial tanks of bentonite. Air observers were then given an opportunity to evaluate drops in typical terrain and conditions.

H. Air Tankers

Seven TBM and one B-26 were under formal contract in 1965. Other air tankers were inspected and available for use if the need developed.



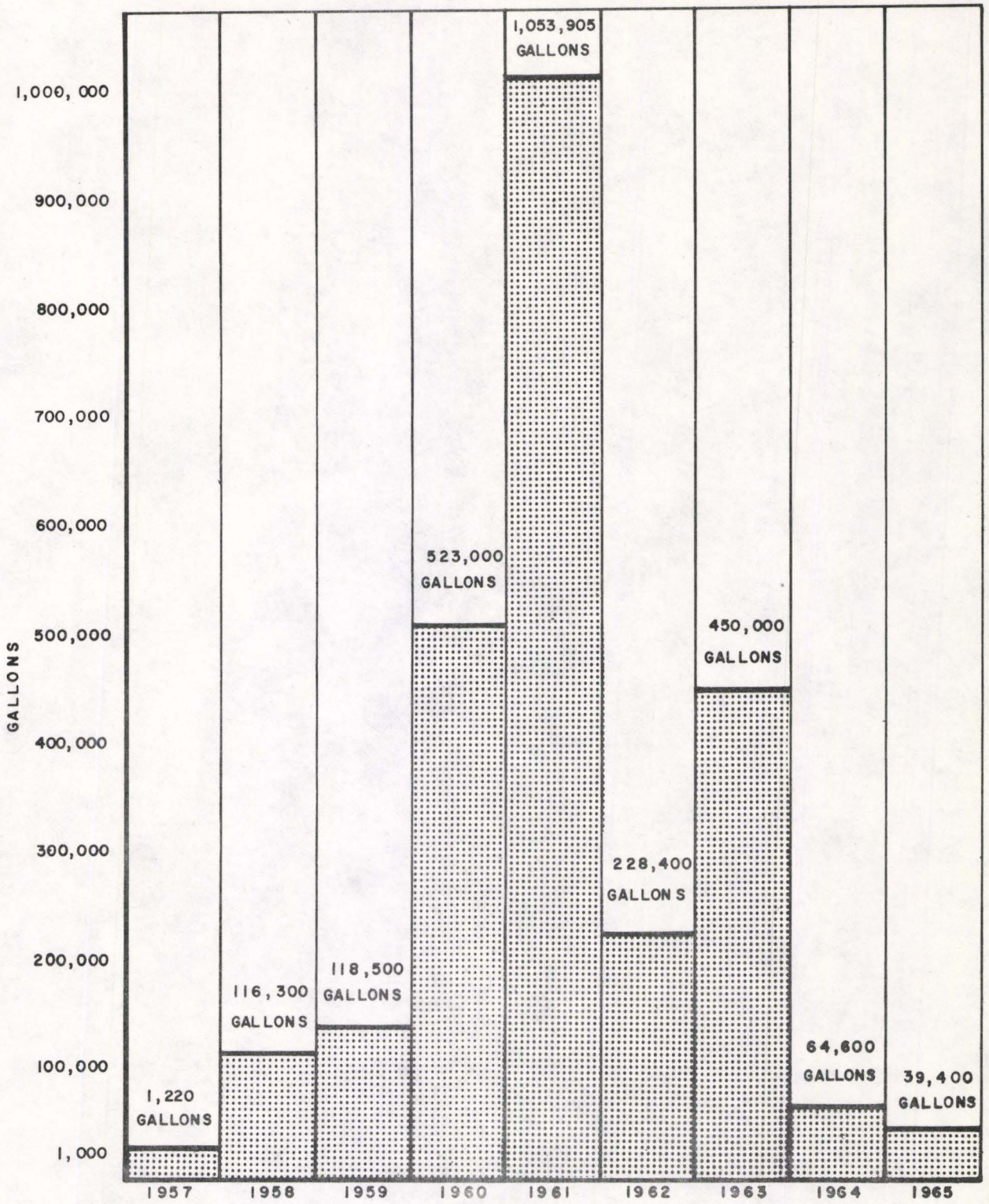
Kalispell Retardant Plant



Helena Retardant Plant

RETARDANT DROPPED IN REGION ONE

1957—1965



Future air tanker contracts will be on a negotiated basis with option for renewal for two additional seasons. This procedure is a result of a Service-wide study on air tanker operations in cooperation with the National Air Tanker Association. It is aimed at uniform rates and requirements for each class of tanker throughout the Forest Service.

I. Developments

During 1965 changes were made in several of the retardant bases.

The Kalispell plant was rearranged to place the storage tanks and mixer in closer proximity to the pump. A new 3-inch loading and transfer pump was also installed.

At Coeur d'Alene it is planned to place 3-inch pipe under the ramp to the loading area. This will eliminate the need of several lengths of hose between the mixer and aircraft. Only one 50-foot length of hose will be needed on the loading area.

Installation of 3-inch loading equipment will be completed at the Helena plant by the 1966 fire season.

All retardant plants were furnished with a mud balance which is used to quickly check the weight per gallon and the density of slurry. This can be helpful in maintaining control of any hydration in clay-thickened retardants or settling of the gum-thickened types.

Also, a modified Marsh funnel was provided for each base and mixmasters were given instruction in its use. This funnel, with the modification developed by the Northern Forest Fire Laboratory, provides a quick method of checking the viscosity of any retardant. In a few minutes time the mixmaster may check viscosities at any level to determine if recirculation is necessary.

III. HELICOPTER REPORT

A. Highlights

The Region had 18 helicopters on formal contract with 3,375 guarantee hours. There were 12 contracts with six operators. Five of these contracts were awarded in 1965 for eight helicopters.

Volume of use in June required the loan of two helicopters from Region 4 for 76 hours plus ferry time.

Fire Control activities accounted for only 9.4 percent of the total helicopter use. This is down from 1964 and points up another light fire season. Sixty-three fires were manned by helicopters with 54 of these as initial attack.

Spray activities amounted to 43 percent of the total hours. The total helciopter use was 14 percent less than 1964.

There was some administrative work done by helicopter on each of the 16 National Forests in Region 1 during 1965.

Helicopter models on Region 1 contracts were:

3 - Hiller 12E
3 - Bell G-3
4 - Bell G-3B
8 - Bell G-3B-1

B. Administrative Flying

The total of nearly 2,000 hours of administrative flying included work for six other Government agencies.

Helicopters were assigned to nine forests for use during July and August. Those held at Missoula were assigned as needed to requesting units. The Division of Engineering made use of one throughout the summer. Another was based in Yellowstone National Park on a co-op basis during July and August and was used 110 hours by Yellowstone Park, Region 1, Region 4, the U. S. Geological Survey and Teton National Park.

In the 2,000 hours of administrative flying time, 3,100 passengers were carried and over 100 tons of supplies and equipment.

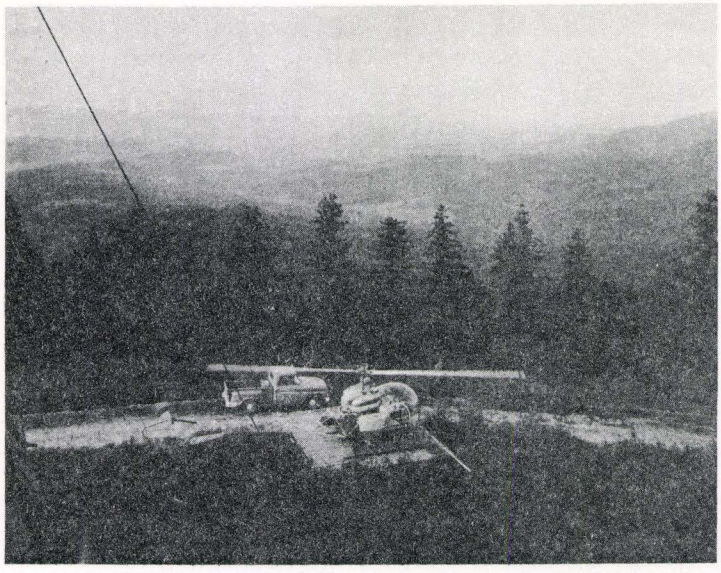
Region 1 helicopter use has averaged 3,056 hours for the 5-year period (1961 - 1965) while the past 12-year average is 146 hours per year.

C. Spray Activities

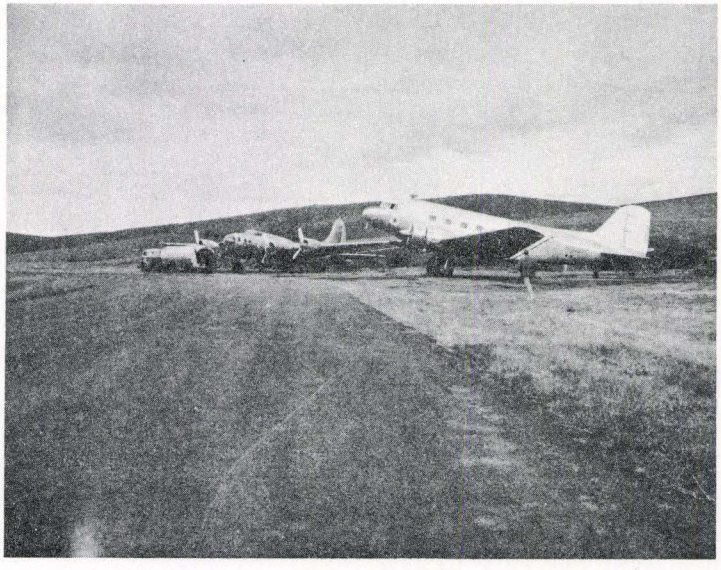
Spraying again accumulated the most helicopter hours for any single activity. One thousand nine hundred hours were flown while spraying whitepine for control of blister rust, sagebrush for range improvement, forest areas to control tussock moth and spruce budworm and improvement of big-game range. Four and one-half million pounds of solution were applied by helicopter in 1965. All but one of the 18 contract helicopters was involved in spraying of some kind. Five were required for sagebrush eradication on three forests. Nine were used to spray for tussock moth control in north central Idaho. Brush spraying was done with 3 helicopters. Blister rust control projects required 12 helicopters for the spring program and 13 in the fall.

In addition, low volume application was tried on three areas for control of spruce budworm and in the fall several plots were sprayed for control of blister rust with reduced rates per acre.

These low-volume tests made use of mini-spin nozzles and special pump equipment. When working properly, these nozzles produce a fine mist that is ideal for low-volume spraying. An interesting aspect in this type of spraying, is that on one project where 9 ounces of malathion were being applied, the helicopter was spraying for over 1 hour without a stop. Helicopter spraying in 1966 will be greatly curtailed due principally to reduction of the blister rust control spray program.



Bell 47G-3B-1 on helipad while
spraying Tussock Moth.



C-39 and B-17 at Moscow Airport during
Tussock Moth spray program.

Production on the spray projects was:

Project	Gallons per Acre	Acres per Hour
Tussock Moth	1	163.5 1/
Sagebrush	3	72.3
Whitepine Blister Rust	7	65.0 1/

1/ Does not include ferry time.

D. Reconnaissance and Survey

Helicopter use on recon and survey was only 50 percent of that flown in 1964.

All forests used them for this purpose at some time during the year and in addition, contract helicopters were provided for the U. S. Geological Survey, U. S. Coast and Geodetic Survey, U. S. Air Force and the Bonneville Power Administration.

Total hours were 360, and of this total the Regional Office engineers flew 134 hours, the majority of which was on the Deerlodge and Bitterroot National Forests.

E. Seeding

Helicopters were used to apply rodent bait and seed on three forests. On two of these, the projects were direct seeding of cutover areas. Douglas fir, larch, and lodgepole were seeded by helicopter in 61 hours of flying. This total includes ferry time on the projects.

F. Fire Control

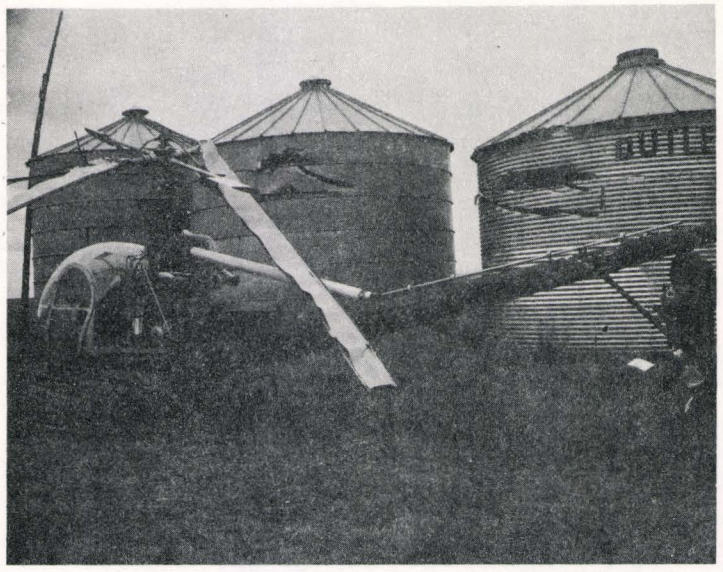
Helicopter use on fire control activities in 1965 was 21 percent less than in 1965. Despite this reduction in hours, helicopters were used in manning 63 fires, 54 of which were initial attack.

Total hours on fire control use in 1965 came to 416 hours.

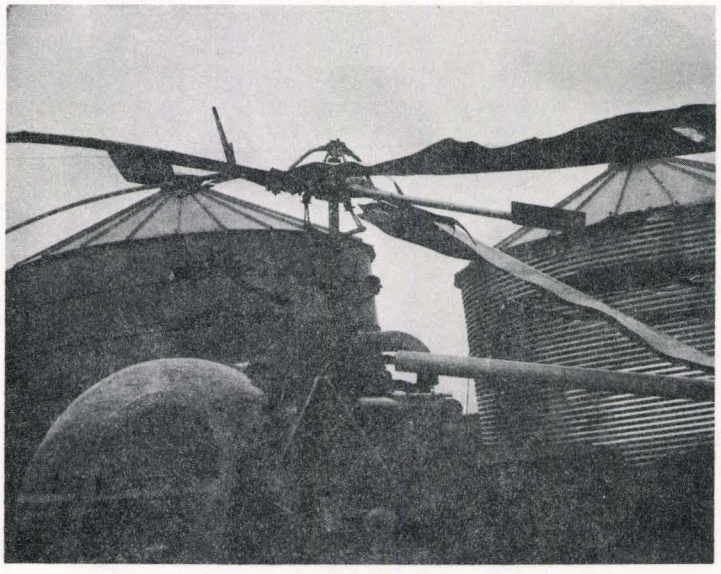
Additional helispots were constructed and many others were improved during the year.

G. Developments

Night flying experimental work was continued when a helicopter was available. Addition of a directional gyro and artificial horizon gave the pilots greater confidence and increased their willingness to take part in the night program.



12E helicopter after striking grain bins.
Note blade separation.



H. Safety

Helicopter accidents occurring during the year.

1. A Region 1 contract helicopter on fire duty in Region 6 was extensively damaged when a downwind landing was made on a helispot near the fire. Two other helicopters were damaged by flying pieces.

2. On the St. Joe Forest, a helicopter took off with two passengers, lost headway and landed hard with minor damage to the helicopter, but no injuries to the passengers. The helicopter was operational the following day.

3. Prior to starting the day's activities, the pilot was warming up the helicopter and took it to a hover. He suddenly lost all lift and resultant hard landing damaged the center frame. Ten days were required for repairs.

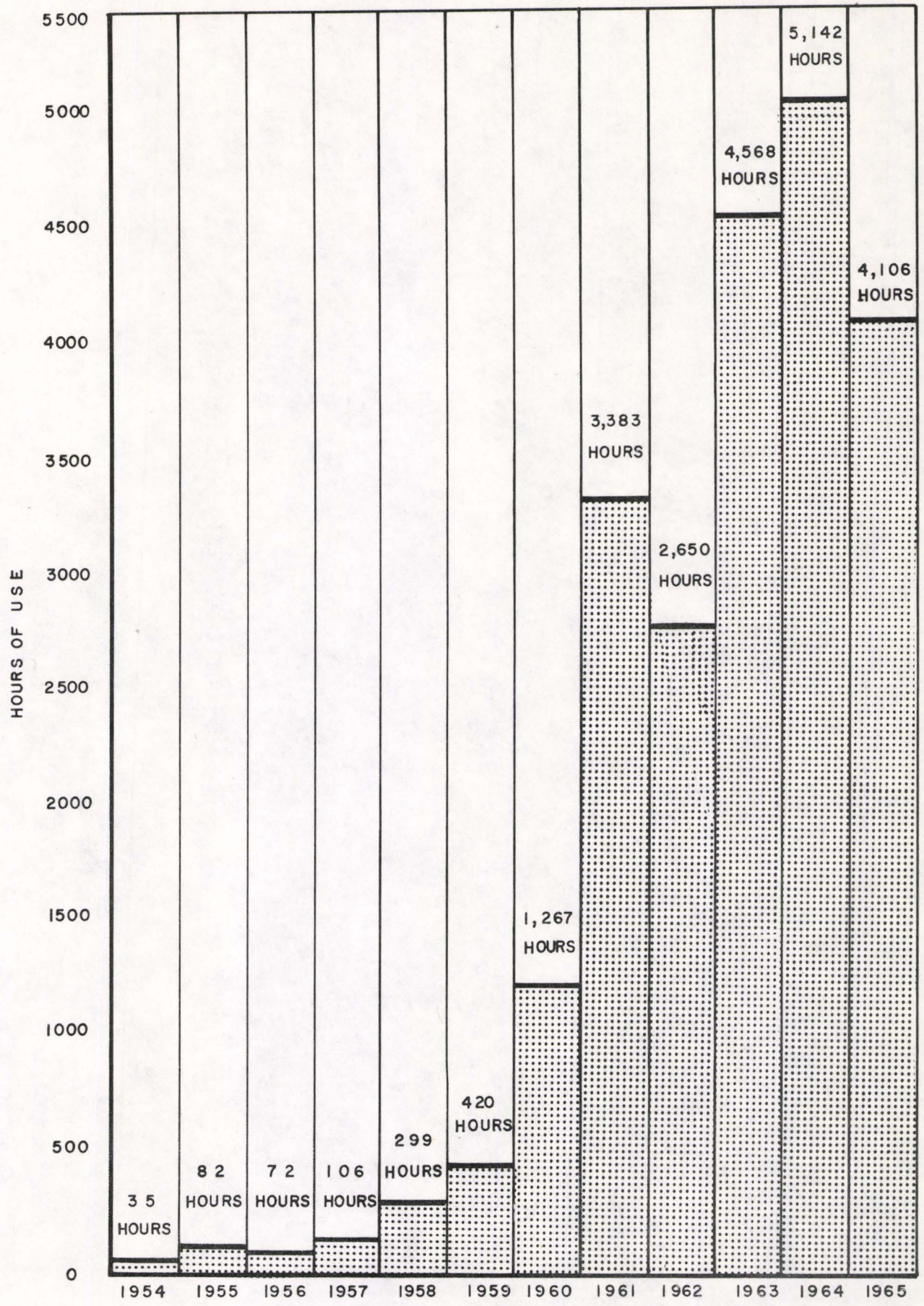
4. A helicopter tail rotor ceased to function properly and required an emergency landing in a creek bed. There were no injuries and the pilot walked out to report the accident.

5. While engaged in an experimental spray project, a main rotor blade was struck and damaged by the blade from one of the nozzle spinners.

6. While returning to the base point, a pilot commented to the Forest Service passenger that vibration seemed excessive and he was going to land and check the helicopter. Since the weather was a little wintry with wind and rain, the pilot elected to land in the lee side of three grain bins that were in a large wheat field. As he was moving toward the bins, the burble created by the wind pushed the copter close enough for the main rotor to strike two bins. The helicopter then proceeded to tear itself apart to the extent that it was a total loss but no injuries resulted. Investigation by the FAA and CAB determined that the lower rear sprague bonding point had broken loose which caused the excessive vibration and contributed to the loss of control as the pilot approached the grain bins.

7. While on an orientation flight for a spray project, an auto-rotation landing was made when the engine quit. Investigation disclosed water in the carburetor and a leaky fuel pump.

HELICOPTER USE 1954—1965



IV. YELLOWSTONE INTERAGENCY FIRE CONTROL CENTER

A. Introduction

In July 1940 the Martin Creek fire jumps on the Nezperce National Forest signaled the birth of the smokejumpers. It could not foretell of the evolution in ideas and expansion that 25 years of smokejumping have brought about. A look at the projected operations in West Yellowstone, Montana, tells of this progress. It is the story of interagency cooperation to accomplish a part of the fire job on 6 million acres of land (responsible to the United States Department of Agriculture, Forest Service Region 1, Region 2, Region 4, and the United States Department of Interior, Yellowstone National Park, Grand Teton National Park, Bureau of Indian Affairs, Bureau of Land Management and Bureau of Sport Fisheries).

B. Organization

Responsibility for administration of the unit is by the Forest Service, Region 1, Division of Fire Control. This includes:

1. Recruiting and training personnel.
2. All technical phases of the operation.
3. Dispatching of services.
4. Project work assignments.
5. Tour of duty and standby of personnel.
6. Payrolling.
7. Billing cooperating agencies for services.

Basic operating costs are shared by each cooperating agency. Distribution of basic costs for the 1965 season are:

Region 1	33%
Region 2	17%
Region 4	17%
Yellowstone National Park	33%

During the 1965 season the smokejumper crew consisted of:

1 GS-8 Smokejumper Foreman
1 GS-7 Smokejumper Squadleader
6 GS-6 Smokejumpers

In addition, Yellowstone National Park employed one GS-7 Squadleader as a member of their fire organization. He received smokejumper and spotter training and was stationed at the Interagency base at West Yellowstone. The unit was operated as a sub-base of the Region 1 parachute project with official headquarters at Missoula, Montana

C. Training

All smokejumpers assigned to the West Yellowstone unit were experienced jumpers and required only the refresher training prior to their assignment. Training was accomplished at the Missoula Base.

A total of 26 training jumps were given at the West Yellowstone old airport.

Expenses incurred by Region 1 for training personnel were charged to the unit. The main item was the rental of aircraft for training jumps.

D. Occupancy

Actual occupancy at the West Yellowstone base was from June 22, 1965, to September 13, 1965. Had fire danger warranted the occupancy of the base outside of the budgeted period (after September 18), the benefiting agency or agencies would have assumed the financial obligation for such a period.

During the 1965 season, space for an office and readyroom were rented from the Montana Aeronautic Commission at the airport in the terminal building. Facilities at the old airport were utilized for packing and drying parachutes.

Quarters were provided by renting two trailers that were parked at the Hebgen Lake Ranger Station. A six-passenger pickup was furnished the unit for necessary travel.

A Twin Beech, under contract with Johnson Flying Service, N6950C with George Wetherell as pilot was based at the airport during the occupancy period.

The various services that were available for the 1965 season were:

1. First Priority was jumping to fires within the areas that each unit has designated for coverage from the base.

2. Cargo Dropping is an important phase of the unit especially to the National Park Service, however, no cargo missions were requested this season.

3. Detection Flights were carried out for the National Park Service. Five such flights were made this season. The Park Service squadleader was the observer and reported directly to the National Park headquarters at Mammoth. Smokejumpers were always aboard and ready for action on these flights.

4. Firefighters. The smokejumpers were available as ground attack forces when the need for smokejumpers was not imminent. There was no ground attack action during the 1965 season.

5. Project Work. The smokejumpers were assigned as requested (and in accordance with the fire danger ratings) to the various cooperating agencies. The projects were varied and consisted of campground construction, cutting poles and posts, clearing land for new District living quarters, fence building and general District work. In Yellowstone National Park such projects as elk and buffalo trap maintenance, sign installations, trail building and maintenance, and telephone line maintenance were completed. Also, 3 acres of land were cleared and burned for the new Interagency Smokejumper site.

The following is a chart summarizing the distribution of smokejumper worktime:

Distribution of Smokejumper Worktime (Man Hours)

Assignment	Jumper Training	Fire Suppression	Project	*Pre-Suppression	Total
Interagency Project	352		296	2,215	2,863
Region 1 Hebgen Dist.			842		842
Yellowstone Park			381		381
Region 2 Shoshone		114			114
Region 4					---
Total Hours	4,200				4,200

*Presuppression includes all worktime in the parachute loft, packing parachutes, readyroom, office work and supervision.

E. Accomplishments

1. Elapsed time averages:

a. Call to takeoff - - - - - - - - - - - 11 Min.

b. Takeoff to jump - - - - - - - - - - - 71 Min.

c. Jump to fire action - - - - - - - - - 45 Min.

d. Call to fire action - - - - - - - - - 127 Min.

Elapsed times are based on two flights to one fire and two dry runs.

On July 14 and 15 five men jumped on the Elizabeth Creek Fire in the Shoshone National Forest. The jump altitude was near 12,000 ft. and the landing spot was 10,800 ft. It is believed this may be a record for a fire jump.